

CLAIMS

I claim:

1 1. A motor brake structure comprising:
2 a rotor;
3 a rotor axis relatively fixed to the rotor;
4 a soft material brake having a central portion thereof into
5 which the rotor axis is inserted, the soft material brake
6 rotating identically with the rotor axis; and
7 a case formed at an outer side of the brake,
8 wherein the soft material brake has a base part having a mortise
9 into which the rotor axis is inserted; a flexible part
10 circularly extended from an end of the base part; and a friction
11 part extended from an end of the flexible part, having a
12 friction surface formed at an outer circumference thereof, and
13 large-sized relative to at least the flexible part.

1 2. The motor brake structure of claim 1, wherein the rotor
2 axis is fitted into and fixed to the rotor.

1 3. The motor brake structure of claim 1, wherein the brake
2 is formed as a single body.

1 4. The motor brake structure of claim 1, wherein the
2 flexible part is gradually more large-sized at an outsider
3 portion thereof.

1 5. The motor brake structure of claim 1, further
2 comprising a brake latching end protruded such that the brake
3 latching end inserted into the mortise is latched with the
4 brake.

1 6. The motor brake structure of claim 1, further
2 comprising a rotor latching end extended from the rotor axis,
3 for fixing a position at which the rotor axis is fitted into the
4 rotor.

1 7. The motor brake structure of claim 1, wherein the rotor
2 has an inner circumference surface to which a hysteresis ring is
3 fixed.

1 8. The motor brake structure of claim 1, wherein the
2 flexible part is formed in an opposite direction to a reverse
3 rotation direction of the motor.

1 9. The motor brake structure of claim 1, wherein the
2 mortise and a brake fixing surface of the rotor axis

3 corresponding to the mortise have non-circular sections such
4 that they are not slid with each other.

1 10. The motor brake structure of claim 1, wherein the
2 flexible part has the least thickness at a connection portion of
3 the flexible part and the base part.

1 11. The motor brake structure of claim 1, wherein the
2 friction surface is rounded.

1 12. The motor brake structure of claim 1, further
2 comprising a rotor bushing as a separate part for allowing the
3 rotor axis to be fixed to the rotor.

1 13. A pipeline opening and closing device comprising:
2 a motor unit for generating a rotation force by a power
3 supply applied from an external;
4 a deceleration unit for decelerating a rotation speed of
5 the motor unit;
6 an actuator for allowing a pipe to be opened and closed by
7 the rotation force transmitted from the deceleration unit; and
8 a braking unit having a brake for decelerating a reverse
9 rotation speed of the motor unit by a friction force generated
10 by deflecting toward and contacting a friction part formed at an

11 outer side with a case by an eccentric force when the motor unit
12 is reversely rotated.

1 14. The pipeline opening and closing device of claim 13,
2 wherein the motor unit is a hysteresis motor.

1 15. The pipeline opening and closing device of claim 13,
2 wherein the brake is formed of a soft material.

1 16. A motor brake structure comprising:
2 a rotor;
3 a rotor axis fixed to the rotor;
4 a soft material brake having a central portion thereof into
5 which the rotor axis is fitted, the soft material brake rotating
6 identically with the rotor axis, and having a base part into
7 which the rotor axis is fitted, at least two flexible parts
8 extended from the base part, and a friction part formed at an
9 end of the flexible part; and
10 a case formed at an outer side of a brake, for contacting with
11 the friction part to decrease a rotation speed of the rotor when
12 the rotor is reversely rotated.

1 17. The motor brake structure of claim 16, wherein the
2 friction part has an outer circumference surface rounded.

1 18. The motor brake structure of claim 16, wherein the
2 brake is formed as a single body of a rubber or silicon
3 material.

1 19. The motor brake structure of claim 16, wherein the
2 flexible part and the friction part are stepped to each other at
3 a connection outer circumference surface thereof.

1 20. A manufacturing method of a motor brake, the method
2 comprising the steps of:

3 inserting a rotor axis into a rotor; and

4 inserting and fixing an end of the rotor axis passing
5 through the rotor, into and to a soft brake.

1 21. The manufacturing method of claim 20, wherein the
2 rotor axis is fitted into and fixed to the rotor.

1 22. The manufacturing method of claim 20, wherein the
2 rotor has an inner circumference surface to which a hysteresis
3 ring is fixed.

1 23. A motor brake structure comprising:

2 a rotor;

3 a rotor axis inserted into and fixed to the rotor;

4 a soft material brake fixed to an outer circumference of
5 the rotor axis to expand an end thereof when the rotor is
6 reversely rotated; and

7 a case being in contact with the brake when the brake is
8 expanded, for decreasing the rotation speed of the rotor.